U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 2
Emergency and Remedial Response Division
290 Broadway, 19th Floor
New York, New York 10007-1866

By Email

October 9, 2014

Ms. Suzy Walls
ARCADIS U.S., Inc.
114 Lovell Road, Suite 202
Knoxville, TN, 37934

RE: Comments on the Data Gaps Sampling and Analysis Plan, and the Quality Assurance Project Plan for the Data Gaps Sampling and Analysis Plan, September 2014,
Rolling Knolls Landfill Superfund Site, Chatham, New Jersey

Dear Ms. Walls:

The U.S. Environmental Protection Agency (EPA) has completed its review and is providing comments on the Data Gaps Sampling and Analysis Plan and the Quality Assurance Project Plan for the Data Gaps Sampling and Analysis Plan, dated September 2014 prepared by ARCADIS U.S., Inc. for the Rolling Knolls Landfill Superfund Site, located in Chatham, New Jersey. This document has also been reviewed by the New Jersey Department of Environmental Protection and is inclusive of their comments.

As previously discussed, EPA believes that many uncertainties still exist regarding the nature and extent of contamination at the site. During the development and discussions regarding the Baseline Ecological Risk Assessment (BERA) Work Plan, EPA noted that without the full delineation of the site it may be difficult to appropriately characterize the ecological risks associated with the contamination at the entire site. Thus, EPA provided two options to move forward with the BERA. It was then agreed that all remaining environmental samples identified in the Data Gaps Memorandum and during the BERA discussions would be collected to further delineate the site.

Upon review, the Sampling and Analysis Plan appears to be designed to be a much targeted approach, only sampling for contaminants that previously exceeded site remediation standards in a nearby soil sample. The overall sampling approach must be adjusted to allow analysis of all site related contaminants and full delineation of the site.

Please review all comments and contact me within three (3) days of receipt of this letter if you wish to schedule a conference call to discuss the comments. In addition, please submit a revised Data Gaps Sampling and Analysis Plan and QAPP responsive and inclusive to all of EPA's comments within twenty-one (21) days of receipt of this letter.

If you have any questions regarding this matter, or would like to discuss current or future work at the site, please give me a call at (212) 637-4362.

Sincerely yours,

Tanya Mitchell
Tanya Mitchell
Special Projects Branch
Remedial Project Manager

cc: G. Zervas, NJDEP

EPA's Comments on the Data Gaps Sampling and Analysis Plan, September 2014, Rolling Knolls Landfill Superfund Site, Chatham, New Jersey

General Comments

1) The sampling and analysis plan appears to be designed to be a much targeted approach, only sampling for contaminants that previously exceeded site remediation standards in a nearby soil sample. However, the nature of contamination at the site appears to be highly variable and the targeted sampling approach seems to ignore the possibility of any of the other site related contaminants of concern (those not found in the nearby discrete soil sample) to be elevated above site remediation standards in these areas. This is particularly concerning in areas where sample locations may be modified to be located further from the original soil sample due to the edge of the landfill being confirmed to be different than what was previously estimated/delineated. The sampling approach should be adjusted, and all samples within and outside the newly delineated waste materials should be sampled for all of the site related contaminants.

2) Although the locations of the permanent monitoring wells are provided on the map, their final locations will be agreed upon depending on the results from the soil samples and temporary well investigation.

3) EPA comments and recommendations provided for the Sampling and Analysis Plan should be incorporated into the QAPP, as appropriate.

4) Please ensure that EPA is provided with an Electronic Data Deliverable (EDD) submittal of all recent data following the step-by-step instructions provided in the EPA Region 2 EDD webpage. http://www.epa.gov/region2/superfund/medd.htm.

Specific Comments

1) Section 1.1 Objectives: Please include the following bullet, "Assess the Data Gaps identified in EPA's August 12, 2014 email attachment.

2) Section 1.1 Objectives, bullet 1: The NJDEP specific requirements in the Technical Requirements for Site Remediation can be found in Section N.J.A.C. 7:26E-4.2, Remedial Investigation of Soil. It is not clear what is meant by "SRS," please revise to clarify that the NJDEP Remedial Investigation of Soil requirements will be met.

3) Section 1.1 Objectives, bullets 1, 2 and 4: The use of the term "certain constituents" is confusing in this summary of the objectives of the investigation. The objective of the data gap sampling is to further delineate the constituents at the site not "certain

constituents." Please delete the word "certain" from each sentence and replace with "site."

4) Section 1.1 Objectives, bullet 6: Please revise as follows: "Investigate the connection between groundwater and surface water on site." It is agreed that sampling is being performed in the ponds but, the bigger picture is to understand the hydrologic connection between the surface water and groundwater on site.

5) Section 2.1 Site Description: Please add a brief summary in the site description summarizing site geology and hydrogeology. In particular, a summary of the current understanding of groundwater flow. In addition, please make the following edits:

The Rolling Knolls Landfill site is an approximately 200-acre, unlined, former municipal landfill located at 35 Britten Road in the Green Village section of Chatham Township, Morris County, New Jersey. The facility is bound by the Great Swamp National Wildlife Refuge to the east, south, and west; Loantaka Brook and private property to the west; and private residential properties to the north and northwest. The Rolling Knolls Landfill overlaps the Refuge on its eastern and southern sides.~~The site consists of a former privately operated municipal waste landfill located at the southern end of Britten Road, south of Green Village in Chatham Township, Morris County, New Jersey~~ (Figure 1). As discussed in Sections 2.2.1 and 3.1 of the SCSR, observations made during test pit excavation (which, for that investigation, included hand auger borings in areas where proposed test pit locations were not accessible to excavation equipment) show that the waste material that constitutes the landfill occupies approximately 170 acres. This includes 141 acres where waste has been filled, and the western portion of the ~~landfill~~ site which consists of 29 acres where a thin layer of waste and debris has been observed on but not below the ground surface (i.e., the surface debris area). Figure 2 presents a Site Plan, which depicts the estimated landfill boundary, as understood prior to RI activities, as well as the ~~refined~~ estimated boundaries of the landfill and surface debris area, based on visual observations ~~during~~ and test pit activities.

As shown on Figure 2, the central and western portions of the ~~landfill~~ site are owned by Robert J. Miele as Trustee for the Trust created by the Last Will and Testament of Angelo J. Miele, the former landfill operator. Eastern and southern portions of the ~~landfill~~ site are located within the Great Swamp National Wildlife Refuge (GSNWR) and owned by the United States Fish & Wildlife Service (USFWS). A northeastern portion of the ~~landfill~~ site occurs on a parcel owned by the Green Village Fire Department, which also includes a baseball field and shooting range. Although the baseball field and shooting range are located within the estimated landfill boundary that was approximated prior to RI activities, test pit activities indicated that no landfilling occurred in these areas (Figure 2).

Physical access to the majority of the ~~landfill~~ site is limited by a chained gate on Britten Road; wet areas and brooks along the eastern, western and southern boundaries; and the exclusion of visitors to the Wilderness Area section of the GSNWR located on a portion of the ~~landfill~~ site and to the east and south. Black Brook is located east and south of the

estimated landfill boundary and generally flows southward and westward in these respective areas. Loantaka Brook is located west of the estimated landfill boundary and flows southward. Residential properties are located north of the ~~landfill~~ site and west of Loantaka Brook. The surrounding area is sparsely populated, consisting of individual residential properties on large parcels and undeveloped open spaces.

Current land use includes commercial/industrial and recreational uses; available data indicate that residents do not live within 200 feet of the estimated landfill boundary. Portions of the ~~landfill~~ site are used for equipment storage by two landscaping companies. Therefore, workers are present at times to deliver, retrieve or maintain landscaping equipment and supplies. In addition, recreators may occasionally hunt on other portions of the ~~landfill~~ site or use the softball field and shooting range ~~located north of the landfill~~.

6) Section 2.3 Investigative History, paragraphs 2 and 7: The correct designation for the Region is "USEPA Region 2". Please make appropriate edits.

7) Section 2.3 Investigative History, last paragraph: Since the RI is not complete or finalized please make the following correction "After the Agreement was signed, the Settling Parties conducted an extensive site ~~remedial~~ investigation sampling between June 2006 and January 2010.

8) Section 2.5 Summary of the Results in the SCSR: Please incorporate the following edits. In addition, some of the statements were removed as they were found to be premature since we are still conducting investigation sampling at the site:

The results of the investigations ~~indicate~~: includes:

- The estimated landfill boundary covers 141 …..

- Surface and subsurface soil impacts were identified across the site ~~landfill~~. Few, …. western portion of the ~~landfill~~ site and along the western and southwestern perimeter of the site ~~landfill~~. The baseball field and shooting range …. identify landfill debris in ~~related impacts to~~ soil in those areas.

- Two areas of impacted groundwater were observed in the shallow water-bearing zone… ~~These impacts to the shallow water-bearing zone are not widespread.~~

- Sub-slab soil gas from beneath the Hunt Club building, which is not currently used ~~neither constructed~~ for residential occupancy ~~nor likely to be used for residential occupancy in the future,~~ was investigated. ….. ~~Furthermore, analytical results for groundwater and soil suggest that widespread soil gas impacts are not expected at the landfill.~~

Surface water …. ~~landfill~~ site. Many of these constituents are also found in surface water and sediment upstream of the site ~~landfill~~. Therefore, their presence in the streams ~~is at least~~ may be in part due to sources upgradient of the site~~landfill~~.

9) Section 3.1.3 Freshwater Wetlands Permits/Permit Equivalencies, paragraph 1: For CERCLA sites, the NJDEP issues permit equivalencies. All the information that is required to obtain a regular permit must be submitted to obtain a permit equivalency. No fees or public notices are required. Work that is subject to the freshwater wetlands regulations cannot begin until the permit equivalencies are issued by NJDEP. Please clarify the text in the document to reflect that requirement, and adjust the schedule appropriately.

10) Section 3.2.1 Soil Sample locations, paragraphs 2 and 3: This section states the "purpose of the soil sampling is to delineate the extent of any constituents associated with the landfill in the adjacent native soil off the landfill." EPA has previously commented that the purpose is to define the extent of contamination above NJ soil cleanup objectives. While the approach here does seem valid to delineate the horizontal extent of contamination, it is unclear how this soil sampling program does anything to delineate the depth of soil contamination in the landfill areas and off the landfill where samples are proposed to only be collected from 0-1 ft bgs. Please modify SAP to ensure that this data gap is being met.

Please make the following edits:
The soil sampling locations proposed ~~in the Preliminary Plan~~ (sample numbers SS-125 through SS-158) are in native soil near previous soil samples ~~on~~ along the estimated landfill boundary where … are located southern and western portion of the site~~landfill~~.

Sampling at …. 25 feet from the edge of the estimated landfill boundary …… (The approximate location of the edge of the estimated landfill boundary is shown in pink in Figure 2, … associated with the site~~landfill~~ in the adjacent native soil ~~off the landfill~~. Therefore, …. edge of the estimated landfill boundary differs from that shown in Figure 2.) All soil ~~The inner~~ samples will be analyzed for full TCL/TAL parameters including PCBs as arcoclors. Certain SVOCs in the TCL will be analyzed by selective ion monitoring (SIM) to obtain a lower detection limit. If PCBs are detected, these samples may be analyzed for PCB congeners, dioxins, and furans.~~the specific constituents that exceeded SRSs in the initial sample on the landfill.~~ If the results of these analyses exceed the SRSs, samples from the outer line will be analyzed for the same parameters ~~those specific constituents~~. If the results from the outer line also exceed the SRSs, additional sampling may be needed to complete delineation. ~~Initial and contingency~~ All soil sample analyses are summarized in Table 1.

11) Section 3.2.2 Soil Sampling Procedures, paragraph 3: Please indicate specifically where the VOC sample will be collected, for example from the zone with the highest PID hit, zones showing discoloration, presence of waste materials, etc.

12) Section 3.2.2 Soil Sampling Procedures, paragraph 4: If adequate sample volume cannot be obtained after four attempts please specify that a soil sample will be attempted at the secondary location (the next ring out).

13) Section 3.2.3 Soil Samples Analyses: Please make the following edits:
Soil samples will be analyzed for the constituents indicated in Table 1. Samples ~~proposed in the Preliminary Plan (~~locations SS-125 through SS-158~~) will be analyzed for specific constituents based on the results of nearby samples on the landfill. Samples at~~ and locations SS-159 though SS-164, which were requested by USEPA (USEPA letter of July 30, 2014), will be analyzed for full TCL/TAL parameters. Certain SVOCs in the TCL will be analyzed by selective ion monitoring (SIM) to obtain a lower detection limit. If PCBs are detected, up to two of these samples (SS-159 though SS-164) may be analyzed for PCB congeners, dioxins, and furans.

14) Section 3.3.2 Temporary Monitoring Well Installation and Sampling Procedures, paragraph 1: The soil collection and screening being performed in conjunction with the temporary monitoring well installation is an opportunity to collect additional soil samples in these areas immediately upgradient from MW-3 and MW-10. Analytical sampling of the soils above the water table for the contaminants found in MW-3 and MW-10 should be considered in these areas.

15) Section 3.3.3 Analysis of groundwater samples from Temporary Wells: Please make the following correction. "Groundwater samples from temporary monitoring wells will be analyzed for full TCL/TAL metals (filtered and unfiltered) and cyanide. Certain SVOCs in the TCL will be analyzed by selective ion monitoring (SIM) to obtain a lower detection limit.

16) Section 3.4.1 Pore-Water Sampler locations, paragraph 1: The purpose of the pore-water sampling is delineate contamination in groundwater at the site. Thus, please replace the two references to "VOCs" with "contaminants."

17) Section 3.5.3 Monitoring Well Development/Redevelopment, paragraph 1: Please provide details on the criteria that will be used to determine when redevelopment of existing monitoring wells is complete.

18) Section 3.5.4.1 Evaluation of Hydraulic Connection of Northern Ponds to Groundwater: Please provide additional details on the frequency of water level and level gauge measurements detailed in this section. It is unclear if the intent is to collect continuous measurements via data transducers or discrete measurements over a period of 4-months.

Although it is assumed, please clarify if precipitation would also be measured during the 4-month period when the surface water levels of the two ponds and water levels in MW-9 and MW-11 are being monitored.

19) Section 3.5.4.2 Site-Wide Groundwater Elevation Measurements, paragraph 2: Please make the following edits: In addition … located near the northern edge of the estimated landfill boundary (Figure 3a), and the large pond near the western edge of the estimated landfill boundary (Figure 3b) prior to groundwater sampling.

20) Section 3.5.5 Monitoring Well Sampling Procedures, paragraph 1: It is not clear why the second round of sampling at the new monitoring wells is only 30 days after the initial sampling. It is typical to collect a second round of samples during a different time period to provide seasonal variation (wet season vs. dry season). Please revise to perform the second round of sampling spring 2015.

During the second event, groundwater samples will be collected from ~~only the newly installed~~ all monitoring wells.

21) Section 3.5.6 Analysis of Groundwater Samples from Permanent Monitoring Wells: Please make the following edit: **"**Existing monitoring wells will be analyzed ~~for VOCs and metals~~ for full TCL/TAL metals and cyanide (both filtered and unfiltered). Certain SVOCs in the TCL will be analyzed by selective ion monitoring (SIM) to obtain a lower detection limit."

22) Section 3.6 Surface-Water Sampling and 3.7 Sediment Sampling: It is noted that if some of the water bodies are ephemeral or smaller than what is illustrated on the site map they may not be sampled. This procedure may not be appropriate in all situations. It may be useful to collect a sediment sample even if there is no surface water present. Additionally, it is not clear what size water body would satisfy the requirements of the sampling plan. Please provide additional details. Should this situation (water bodies are ephemeral or smaller than what is illustrated) occur and an area is proposed for elimination, EPA would like to be notified in real time to provide guidance on how to proceed.

23) Section 3.6.1 Surface-Water Sampling Locations, paragraph 1: Surface-water samples … on the site~~landfill~~ that were not sampled during the previous investigations. In addition, … located southwest of the estimated landfill boundary, ….

24) Section 3.7.1 Sediment Sampling Locations, paragraph 1: Sediment samples will ….site ~~landfill~~ that were not sampled during the previous investigations. In addition, … located southwest of the estimated landfill boundary, …..

25) Section 3.1 Assessment of Hunt Club Well HC-1: EPA agrees that the final disposition of the well will be decided after the investigation is complete. If it is determined that this well will be abandoned, EPA may require another well to be installed in the same general area. This was previously discussed during our meeting on August 19, 2014, and the purpose of installing another well in this area is to continue to collect information on groundwater quality in this area.

26) Section 3.10.1 Interim Technical Memorandum: Please revise the interim technical memorandum to also include the sediment and surface water samples.

27) Section 4.0 Schedule: The schedule did not include the timeline of when the investigations to evaluate the hydraulic connection of the ponds to the groundwater will occur. Please include this information.

Tables

1) Table 1, Sampling Locations, Depths, and Analyses: A revised Table 1 is proved to display the requested analysis. However, the Notes and Footers should be modified to reflect the changes. Table 1 has been modified to reflect the following:

Soil Samples: All soil samples should be analyzed for full TCL/TAL parameters including PCBs as arcoclors. Certain SVOCs in the TCL will be analyzed by selective ion monitoring (SIM) to obtain a lower detection limit. If PCBs are detected, these samples may be analyzed for PCB congeners, dioxins, and furans.

Groundwater and Pore Water Samples: All groundwater and pore water samples should be analyzed for full TCL/TAL metals (filtered and unfiltered) and cyanide. Certain SVOCs in the TCL will be analyzed by selective ion monitoring (SIM) to obtain a lower detection limit.

Aqueous pore water samples should be collected as the sampling devices allow, starting with collection of VOCs, followed by PCBs, pesticides and SVOCs. Bottles for metals analyses would be filled last. All efforts should be taken with the laboratory to determine the minimum amount of water needed for each analysis.

EPA's Comments on the Quality Assurance Project Plan for the Data Gaps Sampling and Analysis Plan, September 2014, Rolling Knolls Landfill Superfund Site, Chatham, New Jersey

General Comments:

1) Measurement Performance Criteria should be established from project DQOs, not by simply referencing the analytical methods. Acceptance criteria for instrument and batch QC (e.g. acceptance ranges for spike recoveries) should be explicitly specified for each analyte/parameter for each chemical method. Alternatively the laboratory specific ranges should be appended to the QAPP to allow review and ensure that the criteria are applicable to the project objectives.

2) Please attach all field standard operating procedures (SOPs) to the QAPP to allow review.

3) Overall, conclusions regarding the extent of contamination, which are mostly contained within QAPP Worksheet #10: Conceptual Site Model – Nature and Extent of Constituents, should be limited. Since the purpose of the Data Sampling Action Plan is to close these data gaps and finalize the extent of contamination with these data, it is premature to make such conclusions at this time. Please revise.

Specifically:

- Constituent Sources: the last sentence states, "Based on the conditions within the landfill boundary, historical information regarding landfill disposal and maintenance activities, and the nature and extent of constituents in environmental media, it is probable that only a small amount of industrial waste has been disposed of at the landfill." In general, this statement should be avoided since the "amount" of industrial waste is unknown. Instead, EPA suggests that the industrial waste is referred to as relatively less than municipal waste.
- Groundwater: paragraph discussing VOCs found in MW-10. It states "Impacted groundwater at this well is considered localized" The Data Gap SAP will help us to answer this question on whether VOCs are localized. Thus, this conclusion should be removed.
- Overview of the Landfill: In the 4th paragraph it states, "Based on the absence of these constituents in nearby wells, the constituents found in groundwater at wells MW-3 and MW-10 are localized and not widespread." For the same reasons noted above, these are the questions we are attempting to answer by conducting the Data Gap SAP, and thus making these conclusions at this time are premature and should be removed.

4) EPA comments and recommendations provided for the Sampling and Analysis Plan should be reviewed and incorporated into the QAPP, as appropriate.

Specific Comments:

1) QAPP Worksheet # 1 and 2: The QA manager/officer must sign the QAPP as evidence of appropriate review.

2) QAPP Worksheet # 3 and 5: The project team members and QA manager/officer should be listed in Figure 1-3 (Organization Chart). The reporting relationship/line of authority must be shown for the QA officer.

3) QAPP Worksheet #11: Project/Data Quality Objectives, State the Problem**,** b. Description of the Problem: The main goals of the sampling are to delineate the extent of certain constituents in soil, groundwater, pore water, and surface water. It is unclear why sediment was excluded from these goals. Please revise to include sediment.

Develop the Analytic Approach: Action levels are identified for soil, surface water, and groundwater and it is noted that these data will be used in the risk assessments for comparative purposes. However, sediment and pore water should also be included in this discussion. Please revise.

4) QAPP Worksheet # 12: Some of the methods presented for this worksheet are not included in the sample listing on Worksheet #18. For example, aqueous PCBs by method SOM01.2 Mercury (ISM01.3 and low level 1631) for aqueous and soil/sediment media are listed on Worksheet #12 (page 32) and Worksheet 28 (page 111) and footnoted on Worksheet #14 (pdf page 47) but are not listed on Worksheet #18, Sampling Locations and Methods. Please clarify if these will be analyzed.

5) Worksheets # 12-5 and 28-5:
a. QC Samples (Metals, Mercury and Cyanide) Interference Check Samples A and AB – Also include the CRQL criteria for this standard.
b. Specify if ICP-AES, or ICP-MS will be required or both.
c. Serial Dilution QC Sample – The Measurement Performance Criteria (MPC) shown applies when the original sample result exceeds 50 times the MDL. Update the MPC.

6) Worksheets # 12-6 and 28-6:
a. QC Samples (Low level Mercury) – the incorrect method is shown on both worksheets. Please update to refer to method 1631 and not 1613.
b. Method requires QC samples Initial Ongoing Precision and Recovery standards and a QC Sample; LCS are not mentioned in the method. Please revise.

7) QAPP Worksheet # 13: This worksheet should include secondary sources of data not the data planned to be collected during this investigation. Secondary sources include data from historical information, previous investigations, and other sources such as literature which were generated for purposes other than this specific study. The data use should cover how the data was used to plan this data gap investigation or how it will be used for future project decisions. Limitation on the data could result from uncertainties in the data quality or changes in site conditions, or lack of records to support the secondary data. Please update this worksheet.

8) QAPP Worksheet # 14and 16 (pdf page 45, 2nd page of worksheet, second groundwater sampling event). It is not clear why the second round of sampling at the new monitoring wells is only 30 days after the initial sampling. It is typical to collect a second round of samples during a different time period to provide seasonal variation (wet season vs. dry season). Please revise to perform the second round of sampling spring 2015.

9) QAPP Worksheet # 14 and 16 (pdf page 54, under Data Analysis and Reporting): The 4th paragraph includes the statement, "If dilutions or re-analyses are included in the EDD, the laboratory must designate which set of results are considered reportable." Since this is subject to change based on data validation actions, the data validator should make the call on which set is to be used. Please update this sentence.

QAPP Worksheet # 14 and 16 (pdf page 58): Two levels of data reporting are discussed. Please indicate which data reporting level will be used for each analytical group/sampling group.

10) QAPP Worksheet # 14 and 16: Project Task and Schedule, section on Assessment/ Audit Tasks (page 58): The planed audit frequency described here differs from that on Worksheet # 31, 32 & 33: Assessments and Corrective Action (page 134). Reconcile so they are consistent.

Project Task and Schedule Field Audits: Describe how the confirmation that work is being performed consistent with the QAPP will be documented, format of documentation and title of document.

11) QAPP Worksheet # 15: Table 1 is referenced for the project action limits and laboratory-specific detection/quantitation limits, however Table 1 includes just a summary of sample locations, depth and analyses. The action limits are required to evaluate whether the selected methods are appropriate to meet the project sensitivity requirements.

12) QAPP Worksheet # 17, **Sampling Design and Rationale**, Description of the sampling area, 2nd bullet: The first sentence implies soils are only being sampled along the southern perimeter of the landfill, however, soil sampling is being conducted along nearly the entire perimeter of the landfill. Please change text accordingly.

Groundwater Samples: In this worksheet it states, "If a sample cannot be collected where planned, the temporary wells may be relocated or may be replaced with surface water samples." EPA does not agree that a surface water sample is sufficient for replacing a temporary well location. A pore water sample is a more equivalent alternative to a temporary well sample, and thus surface water sample should be replaced with pore water sample. Also, if such a field change were to occur, EPA would like to be notified in real time to provide guidance on how to proceed.

Surface-water samples and Sediment samples: In this section of the worksheet it states, "If a sample cannot be collected where planned, the location may be adjusted. Some of the water bodies where sampling is proposed are small and have not been directly observed during previous activities. They may be ephemeral or smaller than shown in Figures 2a and 2b. In such cases, the samples may be collected elsewhere or eliminated." Similar to the comment above, EPA would like to be notified in real time to provide guidance on how to proceed.

13) QAPP Worksheet #18: Sampling Locations and Methods: Comments made on the Data Gap SAP relevant to the sampling parameters should also be considered accordingly in this worksheet of the QAPP.

14) QAPP Worksheet # 19: The preservation requirement for temperature is inclusive of the 6 degree Celsius. Update the sheet to indicate 0 to 6º C (≤6º C).

15) QAPP Worksheet # 19: VOC Soil/sediment container: samples collected with methanol will have elevated reporting limits which may not meet the project objectives. These samples must be shipped with a label indicating their methanol content. Recommend adding a note to this worksheet.

16) QAPP Worksheet # 19: An extra vial or sample jar is required for the laboratory to perform soil/sediment moisture determination. Add this information to the worksheet.

17) QAPP Worksheet # 19: Method 1668 recommends that soil/sediment PCB congener samples be stored in the dark at <-10º C to achieve the one year holding time. Update the worksheet.

18) QAPP Worksheet # 20: Footnote c suggests that the sampling is already completed ("… samples were collected"). Please update language to reflect what will be done.

19) QAPP Worksheet # 23: Delete SOP TAB-6 if regular level mercury (ISM01.) will not be analyzed.

20) QAPP Worksheets # 24 and 25: Add TOC analyzer instrument.